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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,505	04/19/2004	Toru Nakao	Q80667	1939
23373 7590 01/09/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER RENNER, CRAIG A	
			ART UNIT	PAPER NUMBER
			2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/826,505

Applicant(s)

NAKAO ET AL.

Examiner

Craig A. Renner

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>19 April 2004</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The drawings were received on 19 April 2004. These drawings are accepted.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The disclosure is objected to because of the following informalities:

In line 2 of the abstract and line 2 in each of claims 1-3, each instance of "positing" should be spelled --positioning--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2627

6. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In lines 10-11 of claim 1, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of claim 1, that set forth in line 6 of claim 1, or that set forth in line 8 of claim 1.

b. In lines 10-11 of claim 2, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of claim 2, that set forth in line 6 of claim 2, or that set forth in line 8 of claim 2.

c. In line 13 of claim 3, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of claim 3, that set forth in line 6 of claim 3, that set forth in line 8 of claim 3, or that set forth in lines 10-11 of claim 3.

d. In line 3 of claim 7, it is indefinite as to whether "said edge" refers to that of the head set forth in lines 10-11 of independent claim 1, or that of the guide block set forth in lines 11-12 of independent claim 1.

e. In line 3 of claim 8, it is indefinite as to whether "said edge" refers to that of the head set forth in lines 10-11 of independent claim 2, or that of the guide block set forth in lines 11-12 of independent claim 2.

f. In line 2 of claim 9, it is indefinite as to which of the "two guide blocks", set forth in line 7 of independent claim 3, is being referenced by "said guide block".

g. In line 3 of claim 9, it is indefinite as to whether "said edge" refers to that of the head set forth in lines 13-14 of independent claim 1, or that of the guide blocks set forth in line 14 of independent claim 1.

h. In line 2 of claim 12, it is indefinite as to which of the "two guide blocks", set forth in line 7 of independent claim 3, is being referenced by "said guide block".

i. In line 2 of claim 15, it is indefinite as to which of the "two guide blocks", set forth in line 7 of independent claim 3, is being referenced by "said guide block".

j. In line 3 in each of claims 16-18, "said plane surface" is indefinite because it lacks clear and/or positive antecedent basis.

k. In line 7 of claim 16, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of independent claim 1, that set forth in line 6 of independent claim 1, or that set forth in line 8 of independent claim 1.

l. In line 7 of claim 17, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of independent claim 2, that set forth in line 6 of independent claim 2, or that set forth in line 8 of independent claim 2.

m. In lines 5, 5-6 and 6-7 of claim 18, it is indefinite as to which of the "two guide blocks", set forth in line 7 of independent claim 3, is being referenced by each instance of "said guide block".

n. In line 7 of claim 18, it is indefinite as to whether "said magnetic tape" refers to one of those set forth in line 3 of independent claim 3, that set forth in line 6 of independent claim 3, that set forth in line 8 of independent claim 3, or that set forth in lines 10-11 of independent claim 3.

o. Claims 4-6, 10-11 and 13-14 inherit the indefiniteness associated with their respective base claims and stand rejected as well.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bischoff et al. (US 5,237,476).

Bischoff et al. (US 5,237,476) teaches a magnetic head assembly comprising a recording head (36) of which sliding surface has a magnetic gap (12) embedded thereon, two guide blocks (each 38) of which one guide block is set adjacent to a position of up-stream of a line of magnetic tape passing the recording head (as shown in FIG. 7, for instance), the other guide block is set adjacent to a position of down-stream of a line of magnetic tape passing the recording head (as shown in FIG. 7, for instance) and both guide blocks are slightly set back from the sliding surface of the recording head (as shown in FIG. 7, for instance) so that the magnetic tape will slide an edge thereof and an edge of the guide blocks [as per claims 1-3 and 13-15]. With respect to the intended use limitations appearing throughout the claims, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a “magnetic

Art Unit: 2627

head assembly") is intended to be employed (i.e., "to record servo signals, that serves for positing of data recording magnetic heads and data reproducing magnetic heads, on magnetic tapes" and "to record said servo signals onto a magnetic tape", for instance) does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations, *Ex parte Masham*, 2 USPQ2d 1647 (PTO BPAI 1987). As the claims are directed to a "magnetic head assembly", per se, the method limitation(s) appearing in lines 2-3 in each of claims 13-15 can only be accorded weight to the extent that it/they affect the structure of the completed magnetic head assembly. Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "surface-finished for hardening", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "surface-finished for hardening", for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

9. Claims 1-6 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Biskeborn et al. (US 5,883,770).

Art Unit: 2627

Biskeborn et al. (US 5,883,770) teaches a magnetic head assembly (FIGS. 12 and 13, for instance) comprising a recording head (71) of which sliding surface has a magnetic gap (73) embedded thereon, two guide blocks (each 70) of which one guide block is set adjacent to a position of up-stream of a line of magnetic tape (72) passing the recording head (as shown in FIG. 12, for instance), the other guide block is set adjacent to a position of down-stream of a line of magnetic tape (72) passing the recording head (as shown in FIG. 12, for instance) and both guide blocks are slightly set back from the sliding surface of the recording head (as shown in FIG. 13, for instance) so that the magnetic tape slides an edge thereof and an edge of the guide blocks (as shown in FIG. 13, for instance) [as per claims 1-3 and 13-15]; wherein a lap angle between the sliding surface of the recording head and a plane surface formed by an edge of the recording head and the edge of the guide block is in a range of 1.0 to 6.0 degrees (lines 11-13 in column 6, for instance) [as per claims 4-6]. With respect to the intended use limitations appearing throughout the claims, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a "magnetic head assembly") is intended to be employed (i.e., "to record servo signals, that serves for positing of data recording magnetic heads and data reproducing magnetic heads, on magnetic tapes" and "to record said servo signals onto a magnetic tape", for instance) does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. See *Ex parte Masham*, supra. As the claims are directed to a "magnetic head assembly", per se, the method limitation(s) appearing in lines 2-3 in each of claims 13-15 can only be accorded weight to the extent that it/they affect the



Art Unit: 2627

structure of the completed magnetic head assembly. Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "surface-finished for hardening", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process." See *In re Thorpe, et al.*, supra. Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "surface-finished for hardening", for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations." See *In re Hirao and Sato*, supra.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2627

12. Claims 7-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biskeborn et al. (US 5,883,770).

Biskeborn et al. (US 5,883,770) teaches the magnetic head assembly as detailed in paragraph 9, supra. Biskeborn et al. (US 5,883,770), however, remains silent as to the guide block material being " $\text{Al}_2\text{O}_3\cdot\text{TiC}$ " as per claims 10-12, "which has hardness of more than 1200 Vickers hardness" as per claims 7-9, and the magnetic head assembly being used in combination with a "tape guide" to form "another lap angle" from "0.5 to 2.0 degrees" as per claims 16-18.

Official notice is taken of the fact that  $\text{Al}_2\text{O}_3\cdot\text{TiC}$  which has hardness of more than 1200 Vickers hardness is a notoriously old and well know guide block material. Official notice is also taken of the fact that it is notoriously old and well known in the art to use a magnetic head assembly in combination with a tape guide to form another lap angle in the same field of endeavor in order to maintain guiding stability. Official notice is lastly taken of the fact that it is notoriously old and well known in the magnetic tape drive art to modify the parameters of magnetic tape drive components during the course of routine optimization/experimentation. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the guide block material of Biskeborn et al. (US 5,883,770) be  $\text{Al}_2\text{O}_3\cdot\text{TiC}$  which has hardness of more than 1200 Vickers hardness, and to have had the magnetic head assembly of Biskeborn et al. (US 5,883,770) be used in combination with a tape guide to form another lap angle from 0.5 to 2.0 degrees. The rationale is as follows:

Art Unit: 2627

One of ordinary skill in the art would have been motivated to have had the guide block material of Biskeborn et al. (US 5,883,770) be  $\text{Al}_2\text{O}_3\text{-TiC}$  which has hardness of more than 1200 Vickers hardness since such is a notoriously old and well know guide block material, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

One of ordinary skill in the art would have been motivated to have had the magnetic head assembly of Biskeborn et al. (US 5,883,770) be used in combination with a tape guide to form another lap angle since such maintains guiding stability.

One of ordinary skill in the art would have been motivated to have had the another lap angle be from 0.5 to 2.0 degrees since such a range, absent any criticality (i.e., unobvious and/or unexpected result(s)), is generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any criticality (i.e., unobvious and/or unexpected result(s)), the parameter set forth above would have been obvious to a person having ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

***Pertinent Prior Art***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Brock et al. (US 4,044,392), Okada et al. (US 5,307,227), Kimura (US 5,574,606), Biskeborn et al. (US 5,905,613), Shimizu et al. (US 5,933,301), Warmenhoven (US 6,137,659), and Kennedy et al. (US 2002/0167758), which each individually teaches a magnetic head assembly with a guide block set adjacent to a recording head and slightly set back from a sliding surface of the recording head.

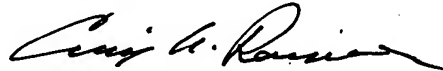
***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Monday-Tuesday & Thursday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Craig A. Renner  
Primary Examiner  
Art Unit 2627

CAR